

Roll No.

E– 836

M. Sc. (IT) (Third Semester)
EXAMINATION, Dec.-Jan., 2020-21

(Elective–V-I)

MOBILE COMMUNICATION

[M. Sc. (IT)–305]

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt all Sections as directed.

Section—A

1 each

(Objective/Multiple Choice Questions)

Note : Attempt all questions.

Choose the correct answer :

1. Which of the following does not come under the teleservices of GSM ?
 - (a) Standard mobile telephone
 - (b) Mobile originated traffic
 - (c) Base originated traffic
 - (d) Packet switched traffic

P. T. O.

2. Repeaters inside communications satellites are known as
 - (a) Transceivers
 - (b) Transponders
 - (c) Transducers
 - (d) TWT
3. The smallest beam of a satellite antenna radiation pattern is
 - (a) Zone beam
 - (b) Hemispheric beam
 - (c) Spot beam
 - (d) Global beam
4. A helical antenna is used for satellite tracking because of
 - (a) Circular polarization
 - (b) Maneuverability
 - (c) Beam width
 - (d) Gain
5. A satellite signal transmitted from a satellite transponder to earth's station is
 - (a) uplink
 - (b) downlink
 - (c) terrestrial
 - (d) earth bound

6. The early FM push-to-talk telephone systems were used in :
 - (a) Simplex mode
 - (b) Half duplex mode
 - (c) Full duplex mode
 - (d) None of the above
7. World's first cellular system was developed by :
 - (a) Nippon Telephone and Telegraph (NTT)
 - (b) Bellcore and Motorola
 - (c) AT and T Bell Laboratories
 - (d) Qualcomm
8. Which of the following do not impact bit error rate in mobile communication systems ?
 - (a) Mobile velocity
 - (b) Channel delay spread
 - (c) Modulation format
 - (d) Base station
9. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN ?
 - (a) CDMA
 - (b) CSMA/CA
 - (c) ALOHA
 - (d) CSMA/CD

10. What is WPA ?

- (a) Wi-Fi Protected Access
- (b) Wired Protected Access
- (c) Wired Process Access
- (d) Wi-Fi Process Access

11. Which of the following specifies a set of Media Access Control (MAC) and physical layer specification for implementing WLANs ?

- (a) IEEE 802.16
- (b) IEEE 802.3
- (c) IEEE 802.11
- (d) IEEE 802.15

12. Which of the following WLAN standard has been named Wi-Fi ?

- (a) IEEE 802.6
- (b) IEEE 802.15.4
- (c) D555 IEEE 802.11b
- (d) IEEE 802.11g

13. What is the nominal range of Bluetooth ?

- (a) 1 km
- (b) 10 m
- (c) 1 m
- (d) 10 km

14. Protocols are set of rules to govern
- (a) Communication
 - (b) Standard
 - (c) Metropolitan communication
 - (d) Bandwidth
15. The technique that makes possible the task of listening and talking in communication system is called :
- (a) Simplexing
 - (b) Duplexing
 - (c) Modulating
 - (d) Multiple Access Technique
16. Which of the following is not a standard of WLAN ?
- (a) HIPER-LAN
 - (b) HIPER LAN/2
 - (c) IEEE 802.11b
 - (d) AMPS
17. HIPER-LAN stands for
- (a) High Precision Radio Local Area Network
 - (b) High Performance Radio Local Area Network
 - (c) High Precision Radio Land Area Network
 - (d) High Performance Radio Link Access Node

18. Military vehicles on a battlefield with no existing infrastructure will deploy network.
- (a) MANET
 - (b) Cell Network
 - (c) LAN
 - (d) Wi-Fi
19. What is the routing algorithm used in MANETs ?
- (a) Shortest Path First
 - (b) Routing Information Protocol
 - (c) Distance Vector Protocol
 - (d) Adhoc on-demand Distance Vector Protocol
20. The advantage of using frequency reuse is :
- (a) Increased capacity
 - (b) Limited Spectrum is required
 - (c) Same spectrum may be allocated to other network
 - (d) All of the above

Section—B

2 each

(Very Short Answer Type Questions)

Note : Attempt all questions. Answer using 2-3 sentences.

1. What is the wireless communication concept ?
2. What are Wireless devices ?
3. What is GPS ?
4. What is the major function of a satellite transponder ?
5. What do you mean by Handoff ?
6. What do you mean by Mobile Station Subsystem ?
7. What is Home RF ?

8. What is MAC ?
9. What is Mobile Adhoc Network ?
10. What is zone routing protocol ?

Section—C

3 each

(Short Answer Type Questions)

Note : Attempt all questions. Answer precisely using < 75 words.

1. What is simplified reference model ?
2. Explain location dependent services.
3. What are the applications of GPS ?
4. Explain the characteristics of satellite systems.
5. What do you mean by Home Agent ?
6. What is the functions of mobile IP ?
7. What do you mean by Ricochet Wireless Modem ?
8. What is Radio Transmission ?
9. What is the characteristics of MANET ?
10. What is wireless routing protocol ?

Section—D

6 each

(Long Answer Type Questions)

Note : Attempt all questions. Answer precisely using 150 words.

1. Write open research area of mobile communication system.
Write the application of mobile communication.

Or

Explain the following :

- (i) Replacement of wired network
- (ii) History of wireless communication and Wi-Fi technology

2. Explain satellite system architecture and satellite system infrastructure.

Or

Explain the role of satellite in wireless communication and types of satellite system.

3. Explain cellular system infrastructure and dynamic host configuration protocol.

Or

Explain the following :

- (i) Agent Solicitation
 - (ii) Handoff parameters and underlying support
4. Explain IEEE 802.11. Explain technologies influence of WLANs/WPANs in future.

Or

What is the RF technology ? Explain Bluetooth, Infra and Radio transmission.

5. What is difference between Adhoc-on demand distance vector routing and Table driven routing protocol ?

Or

What is Routing ? Explain need for routing and routing classification.